

# *The FAA Type Certification Process*

*✈ Teamwork in FAA*

*✈ Partnership with Applicants*



Aircraft Certification Service  
Federal Aviation Administration

May 1996

## ***WHY THIS GUIDE ?***



To certify a better product by effective use of FAA and industry resources.



To enhance the certification process through open communication and accurate feedback.



To identify accountability of FAA's key players during the type certification process.



To describe our operating principles.

## ***THIS GUIDE CONTAINS . . .***



Descriptions of the roles and responsibilities of key players in the type certification process.



The critical steps that lead to a Type Certificate.



"Best Practices" FAA can follow to do its job well.



Job functions for which each of the key players is responsible.



Supplementary guidance for 8110.4, Type Certification Process, and 8100.5, Aircraft Certification Directorate Procedures



### ***Applicant***

Demonstrates compliance to FAR.



### ***Project Manager***

Orchestrates project and gets the job done.



### ***Project Officer***

Provides standardized policy and guidance.

# ***KEY PLAYERS IN THE TC PROCESS***



### ***Engineer***

Applies regulations and policy.



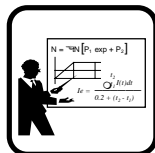
### ***Inspector***

Determines conformity and airworthiness.



### ***Flight Test Pilot***

Conducts FAA flight tests.



### ***NRS***

Provides expert advice.



### ***AEG***

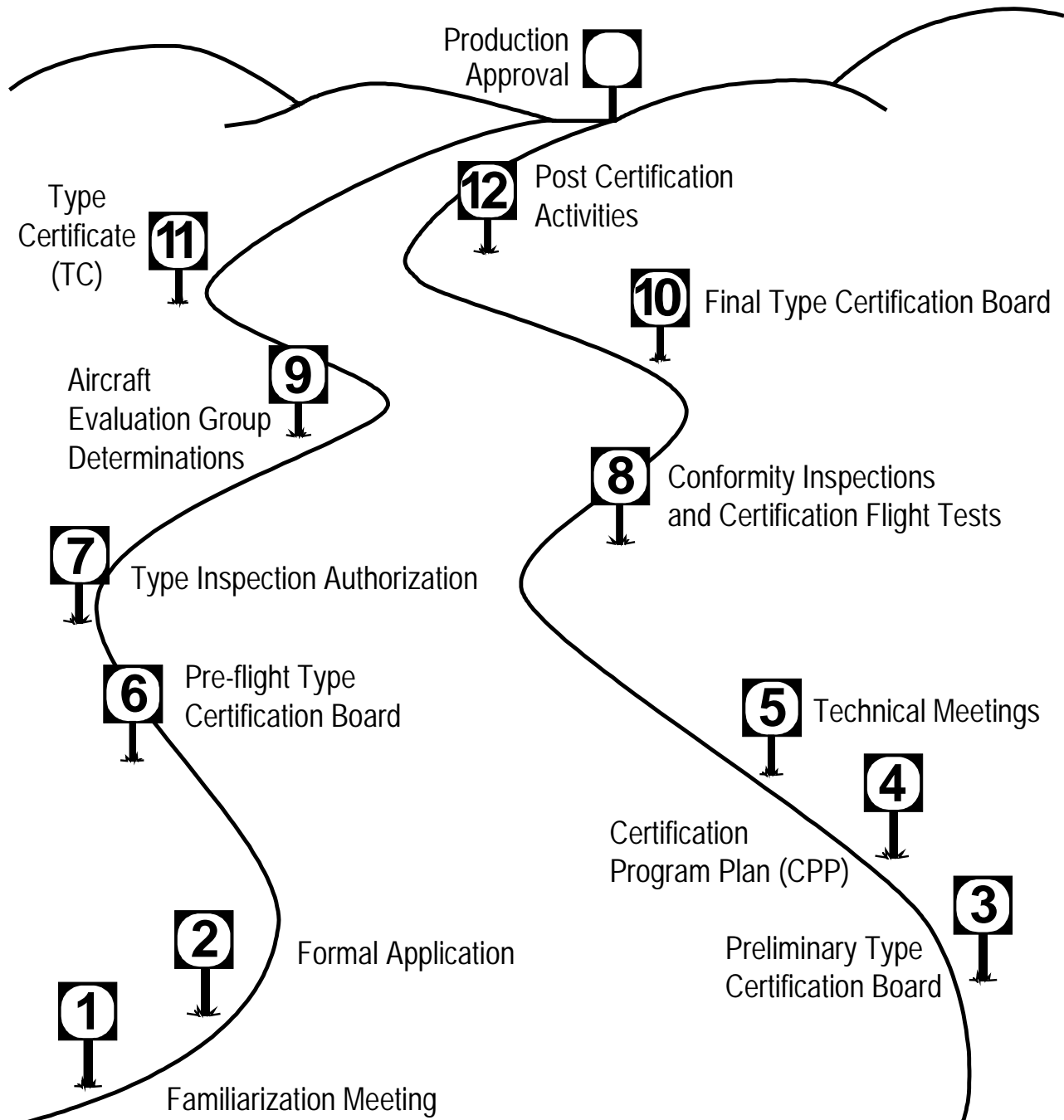
Evaluates compliance with operations/maintenance requirements.



### ***ACO Manager***

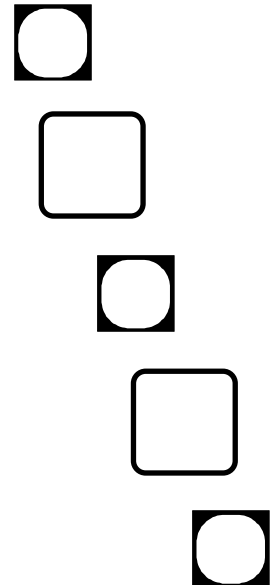
Provides leadership and resources.

# TYPE CERTIFICATION PROCESS



Ref: 8110.4A para 15 and 8100.5

# *Steps In Type Certification*



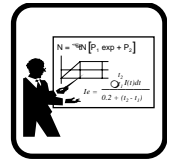
## 1

## Familiarization Meeting

This is a meeting to establish partnership with the applicant. It is an opportunity to develop mutual understanding of the type certification process as it applies to the applicant's design. It's highly recommended as a beginning point in the process.

*Best Practices...*

- ✓ *Listen to applicants . . . understand their needs.*
- ✓ *Introduce all FAA stakeholders, e.g., ACO, MIDO, AEG.*
- ✓ *Explain the TC process . . . ensure applicant understands FAA's requirements.*
- ✓ *Air potential issues . . . minimize surprises down the road.*
- ✓ *Be flexible.*
- ✓ *Stress confidentiality.*
- ✓ *Use a well-structured agenda.*
- ✓ *Agree on clear timeframes and expectations.*
- ✓ *Leave with clear assignments.*



## 2

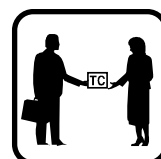
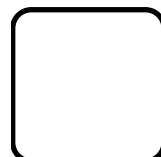
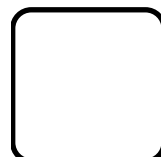
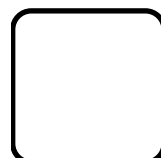
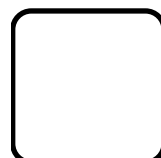
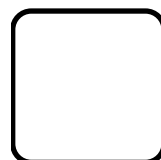
### Formal Application

The applicant's formal application for a TC includes:

- Cover letter
- Form 8110-12
- Three-View drawing

(Ref. Order 8110.4A, paragraph 7)

The information contained in the application is used by the ACO to develop the Certification Program Notification to the accountable Directorate.

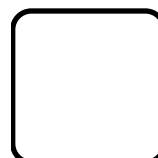
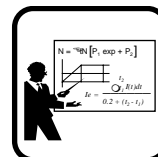


### *Best Practices...*

- ✓ *Get organized to do the job.*
- ✓ *Select the right people for the team.*
- ✓ *Review roles and accountabilities with the team.*
- ✓ *Initiate ongoing dialogue between the project manager, project officer, and team members.*
- ✓ *Work with and be responsive to the applicant.*

### 3 Preliminary Type Certification Board

At this initial formal meeting, the project team collects data about the technical aspects of the project and the applicant's proposed certification basis and identifies other information to start developing the Certification Program Plan. (Ref. Order 8110.4A, paragraph 9). It also identifies special attention items (Ref. Order 8110.4A, paragraph 10d).



### Best Practices...

- ✓ Identify all known major issues and applicable policies before the meeting.
- ✓ Coordinate a well-structured agenda.
- ✓ Ensure the right people attend the meeting.
- ✓ Show up prepared.
- ✓ Document decisions and agreements.
- ✓ Agree on milestones and schedules with the applicant.
- ✓ Identify applicant and FAA points of contact by technical discipline.
- ✓ Leave with clear assignments.

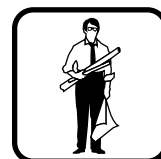
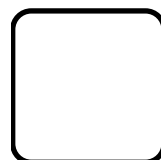
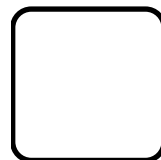
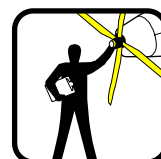
## 4

## Certification Program Plan (CPP)

A key document, the Certification Program Plan addresses:

- The proposed FAA certification basis
- The FAA certification basis, including noise and emission requirements
- Issue papers
- Special conditions, exemptions, and equivalent level of safety findings
- Means of compliance
- Compliance checklist and schedules
- Use of delegations/designees

(Ref. Order 8100.5, Appendix 2)



### *Best practices...*

- ✓ *Coordinate closely with the applicant on key issues.*
- ✓ *Develop the FAA proposed Certification Basis within 30 days after the preliminary TC board and finalize it with the applicant within 6 months*
- ✓ *Agree early on means of compliance*
- ✓ *Use designees/delegations whenever appropriate.*
- ✓ *Work out agreements on milestones and schedules with the applicant.*
- ✓ *Keep management chain and NRS(s) informed about the plan and issues.*

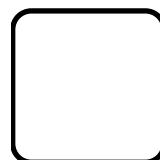
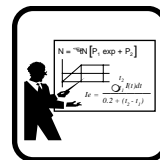
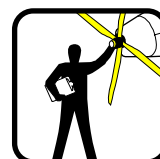
## 5 Technical Meetings

Held throughout the project, technical meetings, e.g., specialist and interim TC meetings, cover a variety of subjects. Team members may

- Approve test plans and reports
- Review engineering compliance findings
- Close out issue papers
- Review conformity inspections
- Review minutes of board meetings
- Revise the Certification Program Plan
- Issue new FAA policy guidance
- Review airworthiness limitations
- Review Instructions for Continued Airworthiness

### Best Practices...

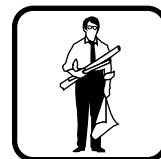
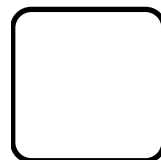
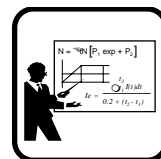
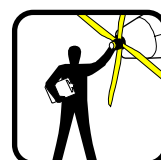
- ✓ *Work for early resolution of issues.*
- ✓ *Coordinate a well-structured agenda.*
- ✓ *Ensure the right people attend the meeting.*
- ✓ *Show up prepared.*
- ✓ *Involve all stakeholders in decision making.*
- ✓ *Keep everyone informed of status.*
- ✓ *Seek NRS or other expert advice when needed.*
- ✓ *Leave with clear assignments.*
- ✓ *Keep commitments.*
- ✓ *Document decisions and agreements.*
- ✓ *Agree on clear timeframes and expectations.*



## 6

## Pre-Flight Type Certification (TC) Board

Discussions at the pre-flight TC board center on the applicant's flight test program, including conformity inspections and engineering compliance determinations.

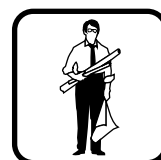
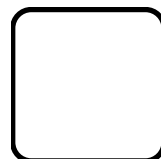
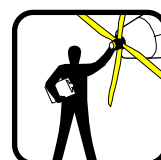
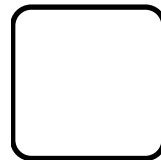
*Best Practices...*

- ✓ *Coordinate closely with the applicant.*
- ✓ *Coordinate a well-structured agenda.*
- ✓ *Ensure the right people attend the meeting.*
- ✓ *Show up prepared.*
- ✓ *Document decisions and agreements.*
- ✓ *Agree on clear timeframes and expectations.*
- ✓ *Leave with clear assignments.*

## 7

## Type Inspection Authorization (TIA)

Prepared on FAA Form 8110-1, the TIA authorizes conformity and airworthiness inspections and flight tests to meet certification requirements. The TIA is issued when examination of technical data required for TC is completed or has reached a point where it appears that the product will meet pertinent regulations. (Ref. Order 8110.4, paragraph 16)

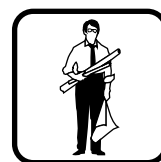
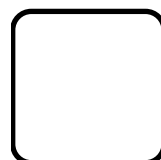
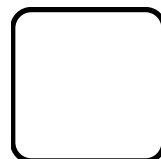
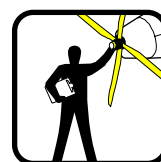
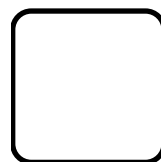
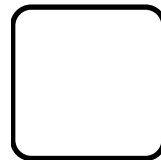
**Best Practices...**

- ✓ *Coordinate closely with the applicant and other team members, including all engineering disciplines and manufacturing inspection.*
- ✓ *Coordinate closely with the Directorate policy staff for significant projects.*
- ✓ *Include AEG tasks as appropriate.*
- ✓ *Ensure that TIA is issued prior to any FAA flight test.*
- ✓ *Complete Part 1 of TIA prior to FAA flight test.*
- ✓ *Manufacturing inspection should coordinate directly with flight test pilot on results of ground inspection and tests.*

## 8

## Conformity Inspections and Certification Flight Tests

Conformity inspections ensure the product conforms with the design proposed for type certification. Flight tests are conducted in accordance with the requirements of the TIA.

*Best Practices...*

- ✓ *Coordinate closely with the applicant and other team members, especially the inspector and flight test pilot.*
- ✓ *Conduct conformity inspections early in the program.*
- ✓ *Ensure timely, high-quality documentation.*
- ✓ *Ensure that applicant has completed and reported applicant flight test results prior to FAA flight test.*
- ✓ *Ensure partnership with AEG where concurrent flight testing will facilitate customer service.*
- ✓ *Ensure aircraft has the proper airworthiness certification and operating limitations.*

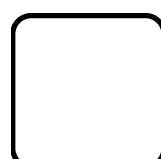
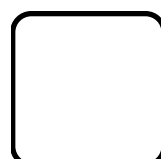
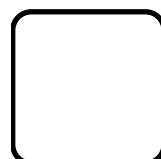
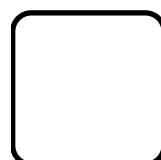
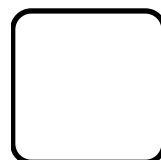
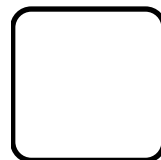
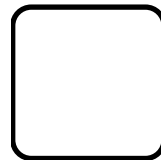
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## Aircraft Evaluation Group (AEG) Determinations

The AEG works with certification engineers and FAA flight test pilots to evaluate the operational and maintenance aspects of certificated products through such activities as:

- Flight Standardization Board (FSB)
  - pilot type rating
  - pilot training checking, currency requirements
  - operational acceptability
- Flight Operations Evaluation Board (FOEB)
  - Master minimum equipment list (MMEL)
- Maintenance Review Board (MRB)
  - Maintenance Instructions for Continued Airworthiness

(Ref. Order 8110.4A, paragraph 17)



### *Best Practices...*

- ✓ *Coordinate closely with the applicant and other team members, especially AEG.*

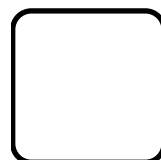
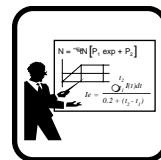
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## Final Type Certification Board

When the applicant has met all certification requirements the ACO schedules the final formal TC board. The board wraps up any outstanding items and decides on the issuance of the TC.  
(Ref. Order 8110.4A, paragraph 10g)

*Best Practices...*

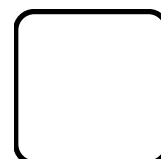
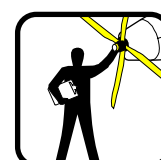
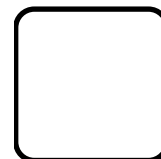
- ✓ *Determine status of all issues.*
- ✓ *Develop strategy for closing out all issues prior to meeting.*
- ✓ *Coordinate a well-structured agenda.*
- ✓ *Ensure the right people attend the meeting.*
- ✓ *Show up prepared.*
- ✓ *Involve the right people in decision making.*
- ✓ *Agree on clear timeframes and expectations.*
- ✓ *Keep everyone informed of status.*
- ✓ *Leave with clear assignments, if needed.*



# 11

## Type Certificate (TC)

The certifying ACO issues the TC (FAA Form 8110-9) when the applicant completes demonstration of compliance with the certification basis. The TC data sheet is part of the TC and documents conditions and limitations to meet FAR requirements.. (Ref. Order 8110-4A, paragraphs 22, 23)



## Best Practices...

- ✓ *Coordinate closure of all items with all team members.*
- ✓ *Inform management chain.*
- ✓ *Send TCDS to AFS 610 and accountable Directorate within 2 weeks of TC issuance.*
- ✓ *Ensure timely, quality documentation.*

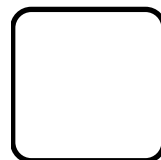
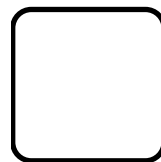
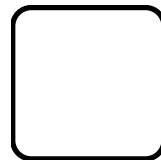
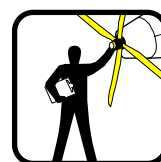
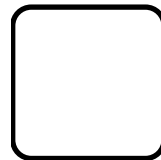
## 12

## Post Certification Activities

This includes the Type Inspection Report, Certification Summary Report, Post Certification Evaluation. The TIR is a record of the inspections and tests authorized by the TIA to show compliance with the FAR. It's completed within 90 days of issuance of the TC. A summary report of the project captures the project's unique technical requirements and lessons learned.

(Ref. Order 8110.4A, paragraph 19)

Post Certification close-out activities complete the type certification project and provide the foundation for our continued airworthiness monitoring activities such as ADs, service bulletins, revisions to type design, malfunction/defect reports, and Certificate Management for the remainder of the aircraft's life cycle.

***Best Practices...***

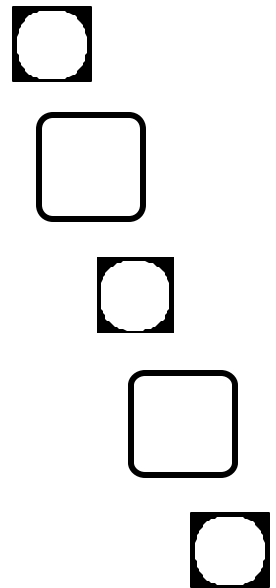
- ✓ *Prepare complete, documented project file.*
- ✓ *Document lessons learned in a high-level compliance summary document.*

## Key Players and Their Involvement in the Type Certification Process

Steps in the TC Process	 P M	 P O	 ACO ENG	 MIDO	 FTP	 NRS	 AEG	 ACO MGR	 APP
<b>1</b> Familiarization Meeting	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>2</b> Formal Application	✓	✓						✓	✓
<b>3</b> Preliminary TCBoard	✓	✓	✓	✓	✓	✓	✓		✓
<b>4</b> Certification Program Plan	✓	✓	✓	✓	✓		✓		✓
<b>5</b> Technical Meetings	✓	✓	✓	✓	✓	✓	✓		✓
<b>6</b> Pre-Flight TC Board	✓	✓	✓	✓	✓	✓	✓		✓
<b>7</b> Type Inspection Authorization	✓		✓	✓	✓		✓	✓	✓
<b>8</b> Conformity and Cert Flight Tests	✓			✓	✓		✓		✓
<b>9</b> AEG Determinations	✓						✓		
<b>10</b> Final TC Board	✓	✓	✓	✓	✓	✓	✓		✓
<b>11</b> Type Certificate	✓		✓	✓	✓		✓	✓	✓
<b>12</b> Post Certification Activities	✓		✓	✓	✓				✓

# *Key Player Functions In The Type Certification Process*

- *Teamwork*
- *Communication*
- *Accountability*





## Project Manager: Orchestrates project and gets the job done

The Project Manager is the focal point for the project; they coordinate and direct the team effort and ensure things are kept moving.

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### Teamwork

- ensures the right people in FAA are involved
- develops certification milestones with applicant
- ensures that Directorate policy staff is aware of design features and proposed methods of compliance early so last minute issues on policy and methods of compliance do not arise

### Communication

- ensures communication flow among specialists, FAA offices, and applicant

### Accountability

- ensures commitments are met
- develops proposed certification basis
- manages timely delivery of products

## STEP

- 1** ☐ Plans for and coordinates the Familiarization Meeting (Ref. Order 8110.4A).
- 2** ☐ Determines project resource requirements to meet FAA commitments.  
☐ Establishes project team including NRS, AEG, etc.  
☐ Prepares Certification Program Notification (Ref. Orders 8100.5 and 8110.4A).
- 3** ☐ Schedules and chairs PreliminaryTC Board and provides status and recommendations.  
☐ Makes applicant aware of appeals process.  
☐ Makes applicant aware of applicable policy and guidance material
- 4** ☐ Prepares a Certification Program Plan; coordinates with Directorate management, NRS, applicant (Ref. Order 8100.5).  
☐ Develops project certification basis.
- 5** ☐ Serves as project focal point with FAA team and applicant; always aware of project status.  
☐ Coordinates technical decisions and regulatory issues with project team and applicant.  
☐ Integrates work of project team to promote timely decisions (Ref. Order 8100.5).  
☐ Identifies issues, coordinates on issue papers, and maintains Issues Book (Ref. Order 8100.5).

- ☐ Resolves technical and managerial issues between FAA team and applicant; elevates to higher management, if needed.
- ☐ Assures specialist communications between ACO and Directorate standards staff
- 6**
☐ Schedules and chairs Pre-flight TC board.
- 7**
☐ Coordinates preparation of and signs off Type Inspection Authorization.
- 8 9**
  - ☐ Serves as project focal point with FAA team and applicant; always aware of project status.
  - ☐ Coordinates technical decisions and regulatory issues with project team and applicant.
  - ☐ Integrates work of project team to promote timely decisions (Ref. Order 8100.5).
- 10**
☐ Schedules and chairs Final TC board.
- 11**
☐ Prepares TC for ACO manager's signature; sends to AFS-610 and accountable Directorate within 2 weeks.
- 12**
  - ☐ Ensures project file documentation: Type Inspection Report (within 90 days of TC issuance), compliance checklist, board minutes.
  - ☐ Prepares Certification Summary Report (Ref. Order 8110.4A).



## **Project Officer: Provides standardized policy and guidance**

The Project officer provides project-specific rules and policy to the team and is the focal point within the accountable Directorate for policy.

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### **Teamwork**

- works with Directorate policy staff to provide coordinated policy to the team
- assures that design features are defined and methods of compliance are agreed upon early in project so last minute issues on policy and methods of compliance do not arise
- assures timely support of ACO elements of the project team

### **Communication**

- serves as focal point for Project Manager on timely and responsive interpretation of policy and rules

### **Accountability**

- establishes the certification basis early
- provides standardized application of rules and policy
- assures that last minute changes in policy are applied to applicant's products only when critical new safety issues are identified, e.g., an accident or service difficulty

## **STEP**

**1**

- ☐ Serves as Directorate focal point and provides project manager with early policy guidance consistent with national policy and common to all Directorates.

**2 4 5**

- ☐ Coordinates key TC project documents within Directorate. For generic issues such as lightning protection, GPS, icing, coordinates with AIR-100.

**3**

- ☐ Attends Preliminary TC board providing pertinent policy guidance.

**4**

- ☐ Analyzes compliance checklist to ensure project manager has all existing policy; provides additional and future policy to project manager.

**6**

- ☐ Attends Pre-flight TC board providing pertinent policy guidance.

**10**

- ☐ Attends Final TC board providing pertinent policy guidance.



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## Engineer: Applies regulations and policy

The engineer is the principal contact for the applicant, guiding the certification process and communicating how rules and policy are applied. They understand the technical details of the project and are responsible for the majority of the compliance findings associated with the project.

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### Teamwork

- works closely with team members to meet work deadlines, e.g., coordinates early on with MIDO and applicant to request conformity inspections and process specification evaluations
- assures Directorate policy staff is aware of design features and proposed methods of compliance early in project so last minute issues on policy and methods of compliance do not arise
- participates in all *formal* team meetings

### Communication

- uses informal and formal communication channels to identify and resolve problems early
- communicates directly with applicant and FAA counterparts on policy staff and in other ACOs
- transmits policy and guidance material to applicant
- raises issues early, e.g., in meetings, telecons, issue papers
- communicates the need for specialized expertise

### Accountability

- assures compliance with regulations and policy
- responsible for technical details
- determines delegations and maintains appropriate oversight
- uses all available resources, e.g., peers, NRSs, policy staff, to make quality technical decisions and accomplish project deadlines

## STEP

**1**

- ☐ Attends Familiarization Meeting.

**3 4 5**

- ☐ Informs project manager early on of need for NRS or technical specialist involvement in project.

**3**

- ☐ Attends Preliminary TC Meeting.

**4**

- ☐ Assists in developing certification basis.
- ☐ Reviews and approves certification means of compliance.
- ☐ Determines use of delegations and designees.

- 5**
- ☐ Communicates with applicant and project team on day-to-day technical issues; keeps project manager informed.
  - ☐ Determines that methods of compliance meet policy or coordinates with project manager on project officer assistance.
  - ☐ Makes compliance findings.
  - ☐ Drafts issue papers.
  - ☐ Manages designee participation in project to ensure quality approvals.
  - ☐ Requests conformity of test articles.
  - ☐ Coordinates with inspector on approval of process specifications.
  - ☐ Transmits technical policy and guidance to applicant or designee.
  - ☐ Uses all applicable policy and guidance material.
- 6**
- ☐ Attends Pre-flight TC Meeting.
- 7**
- ☐ Prepares items for Type Inspection Authorization in discipline.
- 10**
- ☐ Attends Final TC board.
- 11**
- ☐ Reviews Type Certificate Data Sheet.
- 12**
- ☐ Assures that all data submitted for TC are complete and accurate to serve as the foundation for subsequent continued airworthiness monitoring activities throughout the life cycle of the aircraft.



## Inspector: Determines conformity and airworthiness

For type certification projects the manufacturing inspector provides consultation and advice on manufacturing processes proposed in the design; conducts and oversees--through designees--a variety of conformity inspections; evaluates airworthiness of aircraft; issues airworthiness certificates; and conducts progressive evaluation of the manufacturer's quality systems for eventual production certification. The inspector is alert for non-compliance that cannot be determined from type design data only.

### Teamwork

- works closely with team members to accomplish work deadlines, e.g., coordinates early with ACO and applicant for conformity inspections, process specification evaluations, and airworthiness certifications
- participates in all *formal*/team meetings

### Communication

- uses informal and formal communication channels to identify and resolve problems early

### Accountability

- briefs applicant on conformity, airworthiness, and production certification requirements and procedures
- responsible for progressive quality system evaluations in anticipation of eventual production approval
- conducts and oversees conformity inspections prior to any official FAA tests
- determines airworthiness of aircraft prior to flight test
- determines delegations and maintains appropriate oversight of delegations

## STEP

- ①** ☐ Attends Familiarization Meeting.
- ③** ☐ Informs project manager early on of need for NRS or technical specialist involvement in project.  
☐ Attends Preliminary TC board.
- ④** ☐ Determines use of delegations and designees.
- ⑤** ☐ Communicates with applicant and project team on day-to-day technical issues; keeps project manager informed.  
☐ Drafts issue papers.  
☐ Manages designee participation in project to ensure quality approvals.  
☐ Coordinates with engineer on approval of design data.

- ☐ Ensures conformity of test articles.
  - ☐ Transmits technical policy and guidance to applicant or designee.
  - ☐ Coordinates issues with manufacturer to assure corrective action.
  - ☐ Uses all applicable policy and guidance material.
- 6**
- ☐ Attends Pre-flight TC board.
  - ☐ Participates in decision to release aircraft to FAA flight test.
- 7**
- ☐ Ensures conformity of test articles.
  - ☐ Reviews draft TIA for concurrence.
- 8**
- ☐ Ensures conformity of test articles/test article configuration.
  - ☐ Issues appropriate certificate of airworthiness.
- 10**
- ☐ Attends Final TC board.
- 11**
- ☐ Reviews Type Certificate Data Sheet.
- 12**
- ☐ Completes part 1 of TIR
  - ☐ Assures that all data submitted for TC are complete and accurate to serve as the foundation for subsequent continued airworthiness monitoring activities throughout the life cycle of the aircraft.



## Flight Test Pilot: Conducts FAA flight tests

The FAA Flight Test Pilot provides technical advice to the team on aircraft configurations, flight tests and instrumentation needed to provide data for type certification. They conduct FAA flight tests and other evaluations, and assist the applicant in preparing flight manuals and cockpit procedures.

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### Teamwork

- works closely with team members to meet work deadlines, e.g., coordinates early with engineers, MIDO, and applicant for flight test requirements
- participates in all *formal* meetings

### Communication

- uses informal and formal communication channels to identify and resolve problems early
- communicates directly with applicant and FAA counterparts on the policy staff and in other ACOs
- transmits policy and guidance material to the applicant
- raises issues early, e.g., in meetings, telecons, issue papers
- communicates the need for specialized expertise

### Accountability

- assures compliance with regulations and policy
- responsible for technical details
- determines delegations and maintains appropriate oversight
- uses all available resources, e.g., peers, NRSs, policy staff, to make quality technical decisions and accomplish project deadlines

## STEP

- |          |   |
|----------|---|
| <b>①</b> | <input type="checkbox"/> Attends Familiarization Meeting.   |
| <b>③</b> | <input type="checkbox"/> Attends Preliminary TC board.  |
| <b>④</b> | <input type="checkbox"/> Assists in developing certification basis.<br><input type="checkbox"/> Reviews and approves certification test plans.  |
| <b>⑤</b> | <input type="checkbox"/> Communicates with applicant and project team on day-to-day technical issues; keeps project manager informed.<br><input type="checkbox"/> Determines that methods of compliance meet policy or coordinates with project manager on project officer assistance.<br><input type="checkbox"/> Makes compliance findings. |

- ☐ Drafts issue papers.
- ☐ Manages designee participation in project to ensure quality approvals
- ☐ Uses all applicable policy and guidance material.
  
- 6** ☐ Attends Pre-flight TC board.
  
- 7** ☐ Prepares items for Type Inspection Authorization in discipline.
  
- 8** ☐ Conducts FAA flight tests.
  
- 10** ☐ Attends Final TC board.
  
- 11** ☐ Reviews Type Certificate Data Sheet.  
☐ Reviews aircraft flight manual for approval.
  
- 12** ☐ Completes part 2 of Type Inspection Report.  
☐ Assures that all data submitted for TC are complete and accurate to serve as the foundation for subsequent continued airworthiness monitoring activities throughout the life cycle of the aircraft.



## National Resource Specialist: Provides expert advice

For type certification projects, the NRS provides professional technical guidance, advice and assistance. They are our direct link to an extensive professional network in the R & D community, professional and academic organizations, private industry, other government, national and international experts in their field(s).

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### Teamwork

- ➔ works as advisor to certification project teams on issues that require precedent setting approaches to policy and means of compliance
- ➔ participates in Special Certification Reviews, Critical Design Reviews, and Multiple Expert Opinion Teams
- ➔ participates in formal team meetings, as needed

### Communication

- ➔ uses informal and formal communication channels to resolve problems identified by the project team early

### Accountability

- ➔ provides timely response to project team needs for methods of compliance or precedent setting design features

## STEP

- |           |   |
|-----------|---|
| <b>1</b>  | <input type="checkbox"/> Attends Familiarization Meeting as required.   |
| <b>3</b>  | <input type="checkbox"/> Attends Preliminary TC board as required.  |
| <b>5</b>  | <input type="checkbox"/> Assists engineer, inspector, and applicant in understanding technology and related issues; identifies means of compliance.<br><input type="checkbox"/> Assists Directorate policy staffs in understanding technology and related issues in order to develop rules and policy guidance. |
| <b>6</b>  | <input type="checkbox"/> Attends Pre-flight TC board as required.   |
| <b>10</b> | <input type="checkbox"/> Attends Final TC board as required.  |



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## Aircraft Evaluation Group: Evaluates compliance with operations/maintenance requirements

The AEG provides all the applicable Flight Standards technical services to the project. They bring an operational perspective to the type design, assessing the design and determining implications for aircraft operations and maintenance.

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### Teamwork

- works closely with team members to meet work deadlines, e.g., coordinates early with ACO, MIDO, and applicant, participating in engineering compliance inspections and flight test programs
- participates in all *formal* team meetings

### Communication

- uses informal and formal communication channels to identify and resolve problems early
- communicates directly with applicant and FAA counterparts on Directorate policy staff, Flight Standards policy staff, and in the ACO
- provides AFS policy and guidance material to the team
- raises issues early, e.g., in meetings, telecons, issue papers
- communicates the need for specialized expertise e.g., AFS NRSes

### Accountability

- serves as the focal point for all Flight Standards interests in the certification process
- evaluates the aircraft and its systems for operational suitability and continued airworthiness
- assures compliance with regulations and policy
- uses all available resources (other AFS organizations, ACOs, MIDO, etc.) to make quality technical decisions and accomplish project deadlines

## STEP

**1**

- ☐ Attends Familiarization Meeting.

**3**

- ☐ Attends Preliminary TC board.

**3 4 5 6**  
**10 11**

- ☐ Assists engineer, inspector, and applicant in understanding operations and maintenance issues for timely transition into service.

**4**

- ☐ Coordinates key TC project products with AFS policy divisions.

- 5**
  - ☐ Communicates with applicant and project team on day-to-day technical issues; keeps project manager informed.
  - ☐ Transmits technical policy and guidance to applicant.
  - ☐ Drafts issue papers.
  - ☐ Determines that methods of compliance meet operations and maintenance policy.
- 6**
  - ☐ Attends Pre-flight TC board.
- 7**
  - ☐ Participates in development of TIA items related to operational issues.
- 8**
  - ☐ Participates in flight testing related to operational issues.
- 9**
  - ☐ Conducts FSB, FOEB, MRB
  - ☐ Reviews/coordinates proposed documents for acceptance, i.e., AFM, airworthiness limitation section, instructions for continued airworthiness, operations manual, and installation manual.
- 10**
  - ☐ Attends Final TC board.



## ACO Manager: Provides leadership and resources

The ACO manager provides leadership and resources to the project manager in accomplishing the project and resolving conflicts. As manager for most of the project team members, they are responsible for quality of work and standard application of policy and procedures. They bring the ACOMT/ACMT perspective to the project, assure involvement of appropriate policy offices, e.g., Directorates and Divisions, and represent the ACO to upper management and the applicant, when necessary.

### Teamwork

- works with other ACOs to resolve integration issues, e.g., engine-airframe compatibility
- assures that project team works closely with accountable Directorate policy staff in developing products such as the certification basis, special conditions, equivalent levels of safety
- coaches team members
- models behaviors that promote effective teamwork with the ACO, between the ACO and other offices, and with the applicant

### Communication

- ensures a consistent, "one FAA" position is communicated to the applicant
- acts as the communication link--both up and down--with Service management teams, e.g., ACMT, ACOMT
- promotes and uses non-traditional lines of communication, e.g., between the ACO manager and the policy staff manager, that will resolve issues at the operational level prior to elevating to the executive level

### Accountability

- provides and manages the resources to support the project
- monitors project status
- ensures the delivery of a quality product
- strives to resolve issues by coaching team members, encouraging teamwork, modeling valued behaviors, etc.

## STEP

1 2

- ☐ Ensures resources are available to support project: team, travel funds, training, policy and administrative procedures.
- ☐ Integrates project requirements with total workload for the organization: resources, priorities, schedules, staff, political considerations.

2

- ☐ Appoints project manager for TC project.

7

- ☐ Signs TIA.

11

- ☐ Signs Type Certificate.



## **Applicant: Demonstrates compliance to FAR**

The applicant seeks FAA approval of their design. They set the type certification process in motion. We work in partnership to reach a common understanding of both the design features and the FAA certification process so that the unique needs of the applicant will be met by the certification program.

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### **Teamwork**

- plans early and keeps the FAA informed
- team effectiveness is directly dependent on the applicant's full participation

### **Communication**

- communicates early and often about design, schedules, plans for demonstrating compliance
- raises known or anticipated problems early
- establishes access to best sources of information
- uses the ACO as the focal point for communication with the FAA

### **Accountability**

- accepts new policy as safety issues arise
- uses appeal process properly
- works in partnership to reach early agreement on certification basis
- sets realistic schedules

## **STEP**

- 1**
  - ☐ Identifies focal point and lines of communication for certification project team.
  - ☐ Participates in Familiarization Meeting to discuss certification aspects of proposed project.
- 2**
  - ☐ Applies for Type Certificate and includes all relevant data/information.
- 3**
  - ☐ Attends Preliminary TC board and presents certification material on project.
  - ☐ Proposes certification basis for project.
  - ☐ Completes preliminary planning and scheduling; establishes means of compliance.
- 4**
  - ☐ Develops compliance checklist.
  - ☐ Completes preliminary planning and scheduling; establishes means of compliance.

- 5**
  - ☐ Submits type design data and shows compliance per the Certification Program Plan.
  - ☐ Adheres to FAA-approved project sequence and test plans; completes inspections and tests to show conformity and compliance prior to submitting to FAA for testing.
  - ☐ Accepts and follows new policy on safety issues.
  - ☐ Informs FAA early on of schedule revision or major design change.
  - ☐ Abides by FAA appeals process.
  - ☐ Submits statement of conformity (FAA Form 8130-9) on aircraft or parts for testing,
  - ☐ Participates in the development of new, project-specific policy.
  
- 6**
  - ☐ Attends Pre-flight TC board and presents certification material on project.
  
- 7**
  - ☐ Submits statement of conformity (Form 8130-9) on aircraft or parts for testing.
  
- 8**
  - ☐ Adheres to FAA-approved project sequence and test plans; completes inspections and tests to show conformity and compliance prior to submitting to FAA for testing.
  - ☐ Informs inspector when flight test article is ready for conformity and airworthiness certification, when applicable.
  
- 10**
  - ☐ Attends Final TC board and presents certification material on project.
  
- 11**
  - ☐ Prepares draft TC data sheet.
  - ☐ Accepts Type Certificate from FAA.
  
- 12**
  - ☐ Assures that all data submitted for TC are complete and accurate to serve as the foundation for subsequent continued airworthiness monitoring activities throughout the life cycle of the aircraft.

## ***IN CLOSING . . .***

The Aircraft Certification Service is dedicated to providing the highest quality products and services to our customers world-wide. We work as a team with industry to achieve a safe international aviation system.

### ***Our commitment to industry –***

#### ***◆ Communicate often***

- Γ Explain our procedures and listen to industry concerns.
- Γ Solicit industry involvement in key decisions.
- Γ Work as “One FAA”.

#### ***◆ Be accountable***

- Γ Provide quality service.
- Γ Allocate resources, including delegations, as appropriate.
- Γ Apply rules and policy in a standard way.
- Γ Keep commitments.

#### ***◆ Come to closure***

- Γ Complete projects on schedule.

### ***Our expectations from industry –***

- ◆ Plan early and communicate often.
- ◆ Cooperate with FAA initiatives to make aircraft increasingly safer.
- ◆ Follow the appeal process.

**You are a key player on the certification team. You make our commitments happen.**